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President: Mr. Pecsteen de Buytswerve (Vice-President) ..... (Belgium)

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In the absence of Ms. Chatardova (Czechia), Mr. Pecsteen de Buytswerve (Belgium), Vice-President, took the Chair.

The meeting was called to order at 10.10 a.m.

Agenda item 8: Integration segment (*continued*)

Session 3: Panel discussion on "Balancing infrastructure development and sustainability"

1. **The President** said that the current session would address the challenges of sustainable and resilient infrastructure in areas such as health, education, energy, transport, security and public institutions. The discussion would consider the strategies employed by cities and how they related to the national, regional and international levels. It would also highlight the importance of inclusiveness in building resilient societies and address the increasing challenges of citizen security and cybercrime, particularly through the discussion of opportunities and risks related to technology-enabled public services in smart cities.

Panel 1

2. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance), moderator, said that the Carbon Neutral Cities Alliance was a global collaboration of cities committed to the most ambitious targets, such as reducing greenhouse gas emissions by as much as 100 per cent by 2050 and achieving 100 per cent renewable energy and zero waste. It would be helpful to discuss the approaches that cities and States had taken to design a resilient and sustainable infrastructure, as well as how they had addressed any challenges. He wondered what role technology-enabled solutions could play and what measures cities could take to secure citizen safety and smart infrastructure. He asked how the conversation could be continued outside of United Nations forums in order to build public will and political will, and called on participants to share good solutions on social media and to tag a member of government, the press, the private sector or civil society. He asked the panellists how they were building public will among their constituencies and changing attitudes and behaviours in order to implement solutions.

3. **Mr. Al-Shawaarbeh** (Mayor of Amman, Jordan), panellist, said that policies should focus on prevention, and cities should build bridges with various sectors, cities, States and international institutions and organizations.

4. Jordan had received millions of refugees from the wars in the Middle East. Migration, both internal and external, was the most significant challenge facing the city of Amman. While city plans had been designed to accommodate natural growth, conflicts in the region had led to extraordinary increases in population. Nevertheless, the city had proven to be capable and resilient enough to accommodate them. With a strong infrastructure that could serve migrants and residents, a city could develop economic projects that would enable the private sector to provide job opportunities.

5. Without long-term planning, the influx of migrants would put pressure on infrastructure in health, education and transport. In order to respond to those socioeconomic challenges, the local government had partnered with international institutions and other cities. In cooperation with the Rockefeller Foundation, it had prepared a resilience strategy, which had been incorporated into city plans and programmes. A three-year master plan had been established to expand the public transport network, and the government had also partnered with the French Development Agency to complete a bus rapid transit system by the end of 2020. In addition, a long-term strategic plan for public transport was being developed, which would promote development while taking into account the needs of passengers. The public transport system would service remote areas of the city, thereby providing job opportunities in those areas, in particular for women, who struggled to move safely around the city. It would also encourage tourism by facilitating travel between tourist sites. Under the resilience strategy, Amman would become a smart city by 2020 and provide all services electronically. The poor would therefore not need to travel to access services, and the increased transparency would improve civic trust. The digital shift would allow the municipality to provide smart solutions to the challenges facing the city.

6. Jordan had limited access to water and energy resources, but its strong, credible political leadership had built bridges with international institutions around the world to exchange experiences and find solutions, which were reflected in the development plans and programmes to serve the city and people of Amman.

7. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) said that climate change strained water resources. He asked about the concerns surrounding water security and the 15- and 30-year forecast in terms of water availability for Amman, as well as Jordan.

8. **Mr. Al-Shawaarbeh** (Mayor of Amman, Jordan) said that the Ministry of Water and other designated authorities dealt with water security. However, one of the pillars of the resilience strategy dealt with climate change mitigation and adaptation. Although Jordan did

not emit much carbon, it was committed to meeting international standards to adapt to climate change. The Government had adapted the transport network, reduced traffic congestion and increased the use of electricity and renewable energy. It had also increased the number of charging stations to encourage the use of electric cars, especially in the private sector. Amman was currently hosting a conference on smart transport, and the local government was active on social media to allow people to follow the events of the city.

9. **Mr. Williams** (Director of the United Nations Human Settlements Programme (UN-Habitat)), panellist, said that it was important to give greater consideration to challenges to urban resilience beyond that of climate change, for instance rapid urbanization, post-conflict situations and environmental refugees. UN-Habitat focused on urban planning at the national and municipal levels. Because many national policies did not prioritize planning, cities were taking the initiative. The Executive Director of UN-Habitat had held over 150 consultations with Member States, partners, mayors and other stakeholders and had developed a system to classify the urban plans of cities. A number of cities still relied on master plans that had been developed in the 1940s and 1950s, because they lacked the resources, time, energy or means to update their plans. They often had one or two urban planners and a town clerk. Other cities had upgraded their plans in the past five or ten years and had not yet revised them to reflect recent international instruments, such as the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction 2015–2030 or the New Urban Agenda. Those cities sought to upgrade their plans based on new innovations and priorities. Some cities had already updated their plans but did not have the necessary tools to measure progress and were in desperate need of assistance. Other cities had developed new policies and measurement tools but had not yet implemented them, owing to a lack of financing or capacity. Finally, some cities had updated and implemented their plans and measurement tools but had neglected the older parts of the city. In those cases, elements of the smart city only existed in certain parts of the city or in certain areas of municipal authority. A number of cities were also dealing with intense conflicts, post-disaster recovery or significant influxes of migrants; Cox's Bazar in Bangladesh, which had received over 1 million Rohingya refugees in the past year and would soon receive 2 meters of rain from the monsoons, was an example.

10. It was therefore important to tailor resilience solutions and map out appropriate strategies. In that connection, UN-Habitat had developed the City Resilience Profiling Programme, which was a diagnostic tool that allowed cities to understand the shocks that were or would be affecting them. The Programme also facilitated multi-stakeholder consultations in which captains of industry, community organizations, professional associations and other stakeholders participated in the development of the diagnostic tool in order to design a viable implementation strategy.

11. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) said that in the United States, many cities had only one city planner or sustainability staffer, who had limited or no access to communicators, given that public affairs officials usually worked with the office of the Mayor. When considering how to increase financing and generate public will and political will to build resiliency, it was very important to examine the resources available to city planners and consider how they could be equipped with the communications skills or staff to raise awareness among the public.

12. **Ms. Odendaal** (Associate Professor in the School of Architecture, Planning and Geomatics, University of Cape Town, South Africa), panellist, accompanying her statement with a digital slide presentation, said that inclusivity must be a part of the discussion about resilience. Her work focused on how technology could assist in creating more inclusive cities. She examined how infrastructures could be harnessed to improve connectivity and provide easier entry points to allow people to pursue their livelihoods on a daily basis. Infrastructures should not function as immutable vehicles of consumption and expansion. Rather, technological innovations should facilitate engagement with city services. Human agency must therefore play a role in the relationship between resilience and infrastructure. The video that had been shown earlier, *Superblocks: How Barcelona is taking city streets back from cars*, demonstrated how a city could engage the local community, both politically and environmentally. Urban planners also had to harness infrastructure in a way that allowed them to consider areas that were often overlooked by smart cities and resilience campaigns. For example, Map Kibera, based in Nairobi, Kenya, was a citizen-driven mapping wiki that allowed people to know their space and neighbourhoods. Additionally, local communities in the global South could access data through the Know Your City campaign, created by Slum/Shack Dwellers International.

13. In order for smart cities to combat challenges to resilience, consideration must be given to the relationship between technology and data and livelihood strategies, and how that relationship could be translated

into successful urban plans and policies. In order to harness technological power to inform policy, the international community must recognize the difference between data and knowledge. Sometimes capturing knowledge relied on human experiences rather than numbers, as was the case with protest actions and social justice issues. It was also important not to impede technology appropriation and innovation, which was necessary to improve the livelihoods of people working in the informal economy and break down the barriers that they faced in making a living. Finally, space was important. There was a resurgence of interest in the role of space in the work of urban planners, who were becoming more attuned to its relational nature. Resilience required an approach that recognized the need for infrastructure to work for the urban poor.

14. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) wondered whether the public had been meaningfully engaged in managing the Cape Town water crisis.

15. **Ms. Odendaal** (Associate Professor in the School of Architecture, Planning and Geomatics, University of Cape Town, South Africa) said that Cape Town had brought the public into the debate, although perhaps belatedly. To some extent, it had also blamed the public for its water consumption. A partnership-based approach would have been preferable. From a technical and social perspective, the international community should prioritize co-production, which allowed bottom-up solutions to work with official strategies.

16. **Mr. Jinga** (Permanent Representative of Romania to the United Nations; and Chair of the Commission on Population and Development), discussant, said that there must be support for the sustainable management of cities in order to enable them to be drivers of economic growth. Cities had significant potential to promote human health, security, economic activities and livelihoods. It was important to form public-private partnerships, including with small-scale, informal service providers. There must also be a balance between rural and urban needs and development.

17. In order to achieve sustainable development, there must be increased energy efficiency in transport and housing, better access to water and sanitation and improved solid waste management systems. The urban poor must have access to land, housing, services and livelihoods and should be relocated away from environmentally fragile or threatened areas. Efforts should be made to reduce migration from rural to urban areas, promote rural development and encourage industries to relocate. Furthermore, environmental regulations should be strengthened for industries operating within or around large urban centres. Cities and States could best capitalize on the economic recovery by channelling public and private investments to those areas. Given that more than half of the global population lived in cities, strategic policies were needed to improve access to education, health care and housing, as well as to increase productivity and provide more job opportunities while minimizing the adverse impacts of urbanization.

18. The theme of the fifty-first session of the Commission on Population and Development had been "Sustainable cities, human mobility and international migration". A number of States had emphasized the value of remittances. Most of the participating States had reaffirmed their commitment to the human rights of migrants, and many had stressed the need to address the links between urbanization, migration, human mobility, agriculture and rural development. They had emphasized the need to invest in people, especially youth and women, and to provide educational and job opportunities for youth, in particular girls. Several States had considered sexual health and reproductive rights a prerequisite to sustainable development and had advocated for a gender-sensitive approach to family planning. However, the Commission had not reached consensus on adopting the draft resolution on the special theme, as some States had been unable to accept the specific references to sexual and reproductive health, while others had requested the inclusion of a strong sovereignty clause.

19. Speaking in his national capacity, he said that Romania was committed to implementing the 2030 Agenda. The Government had developed a wide range of policies and programmes that aimed to increase the quality of life for its citizens, ensure social cohesion, promote social inclusion, reduce poverty and ensure universal access to health care, education and social protection. In 2018, Romania would present its first voluntary national review during the high-level political forum on sustainable development. Urban development was essential to national growth. A recent analysis prepared by the World Bank had shown that 50 per cent of the population was concentrated in the eight largest metropolitan areas, which generated 75 per cent of national firm revenues. The economic growth in dynamic urban areas had increased the number of commuters and people moving to cities. As a result, integrated transport solutions were needed. Public-private partnerships for smart city projects were facilitated by funds provided by the Government and the European Union. In many cases, the budget was directly managed by local authorities. Municipal governments were also encouraged to cooperate with universities and

other key actors in research and innovation. The largest cities in Romania had pilot projects to implement smart city solutions, such as SMS parking, smart lighting, urban wireless Internet solutions, environmental sensors and video surveillance.

20. **Mr. Hannigan** (Deputy Permanent Representative of Iceland to the United Nations; and Chair of the Commission for Social Development), discussant, said that the Commission for Social Development produced broad policy objectives to help guide national policies. During its fifty-sixth session, the Commission had focused on strategies for eradicating poverty to achieve sustainable development for all, sustainable and resilient societies, and innovation and interconnectivity for social development. Panel discussions had been held on the Madrid International Plan of Action on Ageing and the New Partnership for Africa's Development. Infrastructure and inequality had featured prominently in the discussions and resulting resolutions. The Commission had emphasized the importance of quality, reliable, sustainable and resilient infrastructure to support economic development and job creation, with a focus on affordable and equitable access for all. In order to use infrastructure to create jobs and drive the economy, the poor and the unemployed must have access. While the Commission had encouraged States to make public investments in infrastructure, it had also recognized the key role of the private sector and called on States to promote private investments that improved interconnectivity and prioritized social and economic inclusion and accessibility. The Commission had also called on African States to continue to prioritize structural transformation and invest in inclusive and equitable infrastructure projects to provide quality services in areas such as education and health. With regard to city-based solutions, the panel on eradicating poverty had focused on street homelessness, which impacted access to infrastructure and contributed to inequality. Although the 2030 Agenda did not include an indicator for street homelessness, it was visible in all major cities. The number of homeless people, roughly estimated to be 100 million, would continue to grow.

21. The priority theme for the fifty-seventh session of the Commission would be "Addressing inequalities and challenges to inclusion through fiscal, wage and social protection policies", and the Commission would continue to examine sustainable and social development through the lens of inequality. He asked how to strike a balance between ensuring appropriate access to services and financing them. He also wondered how to promote social acceptance for marginalized groups. He agreed that it was important to avoid making decisions that destroyed the lives of some for the benefit of others.

22. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) said that, in terms of threats to urban resilience or sustainability, terrorism received the most attention and, as a result, individuals had adapted their behaviours accordingly. However, that was not the case for climate change. In the United States, for example, the majority of Americans recognized that climate change was occurring and supported reducing CO2 emissions and increasing funding for renewable energy. Nevertheless, only a minority of the population had adapted their behaviours, which included contacting elected officials or the media and changing shopping or lifestyle habits. He therefore emphasized the need to fund and promote communication, engagement, mobilization and outreach.

23. It would be helpful for the panellists to discuss how their city or organization had influenced public will or political will and how it had engaged in co-production, whether through crowdsourcing, consensus-building or appreciative inquiry. He also asked the panellists to share an exciting solution that was being considered by their city or organization.

24. **Mr. Al-Shawaarbeh** (Mayor of Amman, Jordan) said that the political will of the city of Amman was reflected in its commitment to the Paris Agreement. With regard to public will, participation in decision-making at the grass-roots level directly affected public opinion. Change was usually resisted by those who were affected, but by integrating all groups of society, Governments could ensure the success of any idea. The city's resilience strategy therefore focused on integrating young people in decision-making, improving human resources and empowering women. Cities must consider solutions that could be implemented quickly and directly impact citizens. Strategic plans to improve public transport, for example, had medium- and long-term effects, but they must also include short-term goals.

25. **Mr. Williams** (Director of the United Nations Human Settlements Programme (UN-Habitat)) said that, in terms of mobilizing political will, UN-Habitat had launched the World Urban Forum in collaboration with Member States. The goal of the Forum was not to negotiate a text, but rather to provide an open space for dialogue where people from different perspectives could learn, share experiences and discuss specific issues in their practical work. Participants included slum dwellers, mayors, ministers and representatives of international organizations.

26. Co-production was an important part of building resilient cities, because it recognized the agency of those

who were often excluded from the planning process, as well as the responsibility of the municipal authority to achieve long-term development. Co-production was also a social contract that extended beyond any one administration. For example, the progress that had been made in Barcelona had taken place over the course of twenty years, under three mayors.

27. The reforms to the United Nations development system were profound and would change the way that the Organization worked at the country level, which would have a significant impact on its interactions with cities and its approach to resilience and broader economic development. Those changes had been inspired by the Sustainable Development Goals and would allow the Organization to provide better assistance to Member States in achieving those Goals.

28. Homelessness was a complex issue that affected a diverse population. In the United States, for example, homelessness affected individuals who had been released from prison, those who were unable to access social services, those with psychiatric or mental health problems, those dealing with addiction or drug abuse, and people who were down on their luck and trying to make ends meet. In addition, most people lived on the street rather than in homeless shelters, and their needs should be addressed as well.

29. **Ms. Odendaal** (Associate Professor in the School of Architecture, Planning and Geomatics, University of Cape Town, South Africa) said that the private sector had a significant role to play in enabling inclusive smart and resilient cities. Although there was some debate on who had the authority in public-private partnerships, it was worth examining how those partnerships could enable infrastructure sectors to facilitate more effective city planning and administration.

30. There was tension between the corporate idea of smart cities, which was imposed from above, and a more nuanced approach, in which technology was seen as a way to provide livelihoods. Access to technology meant more than simply Internet access. City governments should take into account the prolific use of mobile phones across economic sectors and social groups. It was important to consider how to facilitate the different entry points to the smart city with a basic smart phone or Wi-Fi access in public spaces. In addition, small-scale financing should not be overlooked in favour of big investments.

31. With regard to co-production, social justice movements in Cape Town had started to shift the conversation to inclusive cities. Through its engagement with oppositional voices, the city government had begun to implement solutions that could have a significant impact on the city. In response to calls for affordable housing in the city centre, the government had devised a more inclusive policy on social housing and the availability of public land in central spaces. With regard to public transport, the initial city plan had been to establish a public transport system that would eventually do away with the informal minibus taxi system. However, her colleagues at the Centre for Transport Studies at the University of Cape Town had been pushing the city to consider hybrid approaches, in which paratransit systems would also be recognized.

32. **Mr. Al-Shawaarbeh** (Mayor of Amman, Jordan) said that financing was a significant challenge for cities. The municipal government in Amman had conducted a self-evaluation to improve the capacities of the finance and administrative teams, and the city's budget had been evaluated and monitored by the World Bank. As a result, the budget was transparent and credible and aligned with governance indicators, which was essential to building public-private partnerships. The city of Amman had contracted solar power projects through build-operate-transfer agreements.

Panel 2

33. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance), moderator, said that 75 per cent of the global population would be living in urban settlements by 2050. It was therefore important to focus on sustainability and resilience, as the threats to urban populations would continue to worsen. Furthermore, cities were responsible for approximately 75 per cent of global energy use and greenhouse gas emissions.

34. **Mr. Gutiérrez** (Mayor of Medellín, Colombia), panellist, accompanying his statement with a digital slide presentation, said that many people still remembered the Medellín of the past. While the city recognized that past, above all it looked to the future and could now be considered one of the most innovative cities in the world in terms of social programmes. Cities were the economic drivers of States and played a fundamental role in achieving the Sustainable Development Goals. The municipal government of Medellín had therefore incorporated the 2030 Agenda into its city development plan, which included 70 per cent of the Sustainable Development Goal indicators. The plan had also been disseminated to external actors. Colombia had committed to aligning city development plan indicators to the Goals, and if all of the cities in the world would make the same commitment, significant progress would be made by 2030.

35. In 1991, Medellín had been the most violent city in the world, with a rate of 381 murders per 100,000 inhabitants. There had been a sustained decrease in the number of homicides, which was currently between 20 and 23 murders per 100,000 inhabitants, owing to a comprehensive security intervention undertaken by several successive governments with the participation of the public and private sectors, universities and civil society. Public resources had been invested where they had been needed and not simply in the neighbourhoods that had voted for the winning candidates. The biggest investments had been made in the areas with the lowest human development index. Comprehensive urban projects had focused on connecting the city by building transport infrastructure and promoting art and culture, as well as providing access to institutional services such as education, health, infrastructure, sports and security. The public transport system played a crucial role. In cities in Latin America, access to mobility was one of the principal causes of social inequality, as the poorest individuals had to spend the most money and time to move about the city and experienced the most delays. The government had decided that Medellín would become the capital of electric mobility in Latin America by 2030 in order to improve air quality and meet climate change commitments. The first electric buses were already running, and the programme would be expanded across the city.

36. The greening of urban spaces was also important. In Latin America, 80 per cent of the population lived in urban spaces, and that number was expected to reach 85 per cent by 2030. The municipal government was implementing a project that would establish green spaces for pedestrians along major roads, with a view to supporting sustainable mobility and providing peace of mind. In terms of economic development, the city wanted to move towards a knowledge economy. In the twentieth century, Medellín had been the industrial capital of Colombia. While it still relied heavily on industry, the government wished to transform the city into a hub of innovation for Latin America and create high-quality jobs through investments in education, science and technology. Three years earlier, the city had invested 0.74 per cent of its gross domestic product in innovations in science and technology. Currently, it invested 2.14 per cent and would invest 3 per cent by 2021.

37. Medellín was no longer the city it had been in the 1990s, but if its citizens did not tell their story, then others would tell it for them. For that reason, symbols of violence were being transformed into symbols of hope. For example, the Monaco Building, which had belonged to a drug trafficking family, would be demolished in January 2019, and a park would be built in its place to honour the victims. The city had also committed to prioritizing victims rather than victimizers and investing in family, education and values. He invited the international community to continue to work with Medellín and hoped that the United Nations could call on all cities to analyse their contributions to achieving the Sustainable Development Goals by 2030.

38. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) wondered what terminology was used to communicate the city's robust Sustainable Development Goals agenda to its citizens.

39. **Mr. Gutiérrez** (Mayor of Medellín, Colombia) said that the local government had explained to each of the communities the responsibility that they had to the planet. It would be impossible to achieve the Sustainable Development Goals without the participation of all citizens; those Goals could not simply be the goals of the President and his cabinet or the mayors. For example, in order to reduce CO_2 emissions, citizens must understand that they needed to use the public transport system more often. The government also emphasized the importance of education and water conservation. The Goals were communicated to citizens in clear, concrete terms so that they could understand their contribution to a better Medellín and a better planet. The underlying term was sustainability, which was essential to progress.

40. **Mr. Zarrilli** (Chief Resilience Officer of New York City, United States of America), panellist, accompanying his statement with a digital slide presentation, said that, in many ways, the resilience journey of New York City had begun with Hurricane Sandy, which had resulted in the deaths of 44 people and caused $19 billion in damages and lost economic activity. That natural disaster, the worst in the city's history, had increased awareness about the wider set of threats facing the city, such as the growing risks related to climate change. As a coastal city with 520 miles of shoreline, New York City was threatened by rising sea levels and coastal storms, in addition to the increasing threats from heat and rain.

41. In 2015, New York City had partnered with 100 Resilient Cities to release its OneNYC strategy, which had been the world's first resilience strategy. It incorporated the Sustainable Development Goals and identified a number of challenges and how to tackle them. For example, it addressed the growing inequality crisis, as approximately 45 per cent of inhabitants were living at or near the poverty line. The ageing infrastructure required continued investments and alternative solutions to mobility and the provision of

vital public services. The population of the city would reach 9 million by 2040, which would provide challenges as well as opportunities for managing growth and improving the lives of citizens.

42. Under the OneNYC strategy, the city sought to manage growth, provide affordable housing, invest in alternative modes of transport, grow the economy and increase job opportunities. The government had committed to lifting 800,000 New Yorkers out of poverty over ten years, including through targeted wage improvements and education opportunities. It had also committed to reducing greenhouse gas emissions by 80 per cent by 2050 and achieving zero waste by 2030 and had launched a $20 billion resiliency programme. As a result of the OneNYC strategy, jobs were at record highs; crime was lower than it had been since the 1950s; the air and surrounding waterways were cleaner than they had been in decades; and neighbourhoods were safer, more affordable and more environmentally friendly. Moreover, the city had raised the bar on climate leadership by taking the fight to the fossil fuel companies that had created the crisis.

43. With regard to climate change, the city was aligned with the Paris Agreement. It addressed the root causes of climate change, continued to cut greenhouse gas emissions, promoted electric vehicles and pursued the first-ever building retrofit mandates for the worst polluting buildings, which accounted for most of the city's greenhouse gas emissions. Under the $20 billion resiliency programme, the city partnered with public and private infrastructure providers to upgrade vital public services in telecommunications, energy and water. It also continued to design flood maps that more accurately reflected risk. With regard to accountability, in January 2018, the mayor and other leaders across the city had announced that pension funds would be divested from fossil fuel reserve owners, which accounted for $5 billion of the $190 billion in pension funds. The city was no longer willing to participate in a system that was destroying the planet. It had also filed suit against the five largest fossil fuel companies for the damages they had caused. Additionally, the municipal government had just announced that it would be performing the first-ever voluntary local review for the Sustainable Development Goals, and a progress report would be released in the summer of 2018.

44. The challenges facing cities could not be addressed by silos or one-time projects. Municipal governments must recognize the threats stemming from climate change and inequality and institutionalize resilience in all activities, such as building and zoning codes, laws, flood maps and design principles.

45. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) asked whether the discussion surrounding resilience was framed to match the culture of New York City.

46. **Mr. Zarrilli** (Chief Resilience Officer of New York City, United States of America) said that, when discussing necessary actions, changes were needed at the institutional level and in lives of individuals. While the citizens were pleased that the city was fighting for them, the government needed to ensure that the choices made by individuals were also a part of that solution, such was how they used energy or moved about the city. When citizens were willing to make changes in their own lives, it provided the political support needed to take on the larger institutional fights.

47. **Ms. Wynhoven** (Representative of the International Telecommunication Union (ITU)), panellist, said that, modern societies around the world had developed a growing dependency on information and communications technologies (ICTs) in the operation and management of critical infrastructures. As a result, they were increasingly vulnerable to cyberrisks. Cybersecurity had become one of the most difficult global challenges, and the annual global cost of cybercrime was estimated to total $600 billion. Building resilient and sustainable societies required holistic action at all levels.

48. Smart, sustainable cities were highly dependent on ICTs. Higher volumes of data and increased complexity provided new opportunities for malicious cyberattacks and data loss, including as a result of natural disasters. With the appropriate processes in place and through multi-stakeholder collaboration and good governance, technology could provide solutions to cybersecurity, information protection and system resilience. In order to guarantee service continuity and integrity, cybersecurity and resilience must be given consideration from the initial development stages of ICT systems that monitored and controlled smart, sustainable cities. Security and trust were paramount in ICT development and adoption. While ICTs could provide enormous benefits, they could also entail security risks, infrastructure disruption, data breaches and increased costs. Nevertheless, they would be necessary to achieve the Sustainable Development Goals, and the potential risks should not be a deterrent.

49. Cities and States at an early stage in their digital transition could benefit from the experiences and good practices of others to establish a robust and secure digital ecosystem that could underpin their society and economy. Stakeholders must prioritize sustainable and secure ICT access. Their coordination was vital to

ensuring that all individuals could benefit from safe and secure connectivity.

50. The ITU Global Cybersecurity Agenda, which had been launched in 2007, was built on five strategic pillars: legal measures, technical and procedural measures, organizational structures, capacity-building and international cooperation. While cyberattacks might not always be preventable, a holistic approach to ICT security could help to put protections in place, thereby increasing resilience. ITU facilitated the World Summit on the Information Society action line on building confidence and security in the use of ICTs and contributed to the World Summit on the Information Society-Sustainable Development Goals Matrix in order to identify areas in which security and the use of ICTs could foster and accelerate the implementation of the 2030 Agenda, including access to electronic financial services, access to online information as part of education, empowerment of women, development of resilient infrastructure, sustainable economic growth and the transition to smart cities. Through the national computer incident response team programme, ITU worked with States to build their capacity to respond to cyberattacks and to protect critical infrastructure. The Global Cybersecurity Index, which was a multi-stakeholder initiative to measure commitments to cybersecurity, provided a means for States to benchmark their approach to cybersecurity and identify opportunities for improvement. ITU had also published a national cybersecurity strategy guide to provide a starting point for States to develop a cohesive framework with a view to implementing a coordinated response to cyberthreats with the involvement of all government sectors as well as key national stakeholders. The primary aim of the "United for Smart Sustainable Cities" initiative was to advocate for public policy in which ICTs, and ICT standards in particular, played a definitive role in the transition to smart, sustainable cities. The initiative helped to facilitate cooperation, draft guidelines, establish key performance indicators and share case studies on issues such as financing, smart cities, blockchain, artificial intelligence and circular cities. She invited all cities to participate in that programme.

51. Cybersecurity was an issue that affected every State. Governments, industry and other institutions must share experiences and expertise to strengthen capacities to protect against cyberattacks, as collaboration would be critical to achieving all of the Sustainable Development Goals.

52. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) asked whether there was a looming cyberthreat of which people were unaware.

53. **Ms. Wynhoven** (Representative of the International Telecommunication Union (ITU)) said that, while strengthening infrastructure played a critical role in cybersecurity, individual behaviours were also important. Individuals must be informed and protect themselves against cyberthreats, as it was easy to feel a false sense of security.

54. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) said that security breaches were the future of warfare between non-State actors. He asked if there was an exciting solution that she would like to share.

55. **Ms. Wynhoven** (Representative of the International Telecommunication Union (ITU)) said that the potential of ICTs to assist in achieving the Sustainable Development Goals was incredible, and the international community needed to maximize their use. Currently, half of the global population was not connected, and among those who were, many did not have good connectivity and could not fully benefit from ICTs. For that reason, Member States had called for universal access to ICTs by 2020, and much progress still needed to be made. When considering the potential advances from artificial intelligence and blockchain, it was important not to lose focus on closing digital divides, especially for marginalized groups and women and girls.

56. **Mr. Ponce Gandarillas** (Co-Founder and Chief Executive Officer of CityHeroes Incorporated), panellist, accompanying his statement with a digital slide presentation, said that CityHeroes was a technology start-up working with Governments, public agencies and other institutions to help build better and safer cities by combining web, mobile and hardware technologies to connect government authorities, the private sector and citizens. It focused on providing solutions for the inefficiency of the workforce on the ground, the excessive time and cost of collecting and processing information and the absence of communication channels between authorities, companies and citizens. Those problems cost cities and companies millions of dollars every day.

57. The platform designed by CityHeroes worked on four levels. The first level allowed cities and companies to better manage their workforce and assets on the ground. In the public sector, for example, cities could monitor and manage government inspectors, police officers, firefighters and any other city employees working in the field. In the private sector, the platform could be used to monitor salespeople or supervisors.

Cities and companies that had used the platform had greatly improved the efficiency of their teams. The second level of the platform allowed employees to send activity reports in real time. The third level allowed operation centres and administrators to gather and process that information in order to improve awareness of the activities on the ground. The fourth level allowed organizations to open a direct channel of communication with citizens. For example, the platform could be used to map mosquito populations with input from citizens, which would help to facilitate an immediate response from the private sector and government officials.

58. Unfortunately, CityHeroes had encountered barriers, in particular in working with the public sector, which needed to be addressed to facilitate the implementation of any project. For example, in their contracting processes, city governments had been unaccustomed to working with start-ups. As a result, CityHeroes had been asked to go through endless public tenders or to freeze $0.5 million in order to participate. Additionally, many of the politicians had not understood the purpose of the platform and wanted to use it only to connect with citizens with a view to benefiting their political brand by providing the community with technological innovations. However, the largest barrier was corruption. CityHeroes had spent two years attempting to close a deal with a local government in Latin America only for officials to request a bribe. While the contract would have been extremely beneficial, CityHeroes had backed out owing to its commitment to reject corruption. In his view, corruption had a significant impact on resilience and sustainability and should feature in the current discussion.

59. Resilience did not require cutting edge technology; there were many simple solutions available that could make a difference. It was important to go back to basics, establish core values and connect with the right people who were willing to take the right actions.

60. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) asked how CityHeroes was able to use its brand to get buy-in for the work that they were doing.

61. **Mr. Ponce Gandarillas** (Co-Founder and Chief Executive Officer of CityHeroes Incorporated) said that "city heroes" was both the company name and the product. Their goal had been to empower citizens to be real heroes and work with authorities and the private sector.

62. **Ms. Burmanje** (Chair of the Executive Board, Land Registry and Mapping Agency, Netherlands; and Co-Chair of the United Nations Committee of Experts on Global Geospatial Information Management), discussant, said that the United Nations Committee of Experts on Global Geospatial Information Management sought to play an important role in setting the agenda for the development of geospatial information and to promote its use to address key global challenges. The Committee served as a forum in which Member States could coordinate with each other and with international organizations. Since its first meeting in 2011, the scope of its work had expanded to include the Sustainable Development Goals, the implementation of standards, the integration of geospatial statistics and related information, and the determination of fundamental data sets. The geospatial and statistical communities were strong contributors to sustainable development and had partnered with stakeholders in other sectors, including health, energy and food. Sustainable development could only be realized if the international community acknowledged the changes that were taking place in societies and cities, which included climate change, digitalization, urbanization and the depletion of natural resources.

63. The Committee recognized the need to leverage geospatial information management technologies and innovations to build resilience and reduce threats from unsustainable production and resource consumption, pollution levels, disaster risks and climate change. A smart, data-driven geostatistical approach should be taken with regard to population growth. Censuses, household surveys, registers, administrative data, address postal codes and other measures allowed economic and environmental data to be combined with location-based information to understand local contexts and dynamics. She wondered how cities could ensure a healthy urban environment in the face of housing shortages, rising prices, increased mobility and a growing global economy that facilitated mass migration. She also asked how technology could be used to manage mobility and public services in that context.

64. In designing resilient and sustainable infrastructure, cities and States prioritized a liveable, safe and pleasant environment for citizens, which required clever solutions that could be achieved with smart technology. Although there had been rapid development in applied technology and digitalization, fragmented initiatives and small-scale ideas sometimes hampered efforts to meet global challenges. It was therefore important to employ integrated approaches across sectors and undertake joint initiatives. As the volume of data traffic increased, the demand for high-speed connectivity was growing. As a result, there was a need for digital infrastructure, which should include components of digital city models such as connection

networks and smart devices for location-based services. Inclusion was also essential to resilience. However, inclusion also implied that everyone needed to participate in resilience initiatives. Technology and innovation blurred the lines between the traditional roles of Governments and citizens, and initiatives could be implemented on a global scale or in an individual's backyard.

65. While the challenges were immense, geospatial information, technology innovation platforms and solutions that were facilitated by strong public-private partnerships gave States the necessary means to develop an accessible, standards-driven, interoperable local to global system-of-systems. Nevertheless, geospatial information could provide only insight; public will and political will was essential to progress.

66. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) said that it would be helpful for the panellists to discuss how their city or organization had influenced public will or political will. He also asked them to share an example of co-production and an exciting solution that was being considered by their city or organization.

67. In a social contract, cities and States were asking individuals to change their behaviour. He therefore called on participants to consider what had caused them to make the necessary changes in their lives, with a view to identifying issues that could encourage public and political will.

68. **Mr. Zarrilli** (Chief Resilience Officer of New York City, United States of America) said that promoting personal lifestyle changes could build public support for larger initiatives. The city of New York had a programme called GreeNYC, which was designed to target behaviours that could be changed at the individual level. It was a light-hearted campaign that focused on waste, plastics and organics recycling, as well as energy choices and how to weatherize a home or apartment. When aggregated, those simple changes could have a big impact and could stimulate the larger social change that was needed to address the challenges of climate change and resilience.

69. **M. Gutiérrez** (Mayor of Medellín, Colombia) said that national Governments, local governments and multilateral partnerships understood the changes that needed to be made, but every individual had to be invested to achieve those goals. The international community must therefore focus on changing city culture. Each person must feel that those changes were valuable and contributed to development. His administration had recently begun a campaign that focused on rewarding positive behaviours rather than framing the discussion in negative terms. The city would recognize those who most frequently used public transport, as well as the neighbourhood or community with the largest decrease in violence.

70. In order to combat corruption, it was important to understand the origins of that culture. Civic trust was fundamental to making progress. In that connection, his office had experimented by setting up six unattended shops in busy areas across the city, equipped with a cash box, a mirror and a sign that said, "We trust you". At the end of the experiment, there had been 97 per cent compliance. It was important to empower and trust citizens. Each individual must understand that achieving the Sustainable Development Goals depended on them, and his office was ensuring that each community knew that it had the power to improve the city.

71. **Mr. Ponce Gandarillas** (Co-Founder and Chief Executive Officer of CityHeroes Incorporated) said that a number of entrepreneurs felt that it was not possible to change the culture of corruption in Latin America. It was therefore important to show them that it was possible, and sometimes that meant turning down opportunities.

72. **Ms. Wynhoven** (Representative of the International Telecommunication Union (ITU)) said that, when implementing technological solutions, it was important to consider whether women and girls had equal opportunities to access and develop technology. In that connection, EQUALS was a global network that focused on bridging the digital gender divide. It dealt with issues such as access, skills and leadership and worked to increase the visibility of women's contributions. Too often, the role of women and girls did not receive enough attention, but everyone needed to be engaged in order to achieve the Sustainable Development Goals and build sustainable and resilient societies.

73. **Ms. Mejía Vélez** (Colombia), said that the United Nations system was still far from achieving gender parity, and she wondered how the governments of New York City and Medellín were working to achieve that goal. For those in the United Nations system that had negotiated the 2030 Agenda, it had not been easy to spread the message, and she wondered how those municipal governments had promoted the Sustainable Development Goals.

74. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) said that it was hard to rally the public in support of what appeared to be distant goals, such as those set for 2030 or 2050. He wondered how the international community could quickly and compellingly convey that the future was not so distant.

75. **Mr. Gutiérrez** (Mayor of Medellín, Colombia) said that, with regard to women, more improvement was needed in several areas, in both Medellín and Latin America. There must be more women in power. In Medellín, 60 per cent of senior positions in the municipal administration were held by women, owing to their qualifications and not to gender quotas. The international community must also combat violence against women and girls. Economic dependency was the main reason that women did not report spousal abuse. The Medellín Secretariat for Women therefore promoted opportunities for education, economic development and entrepreneurship, especially for victims of violence. The government had also strengthened the municipal family courts to provide justice for citizens, in particular women. It was also important to combat adolescent pregnancies, which continued to be a complex issue in Latin America. Lastly, there must be safe spaces and opportunities for women and girls.

76. **Mr. Pineda** (Mexico) wondered how the mayor of Medellín would ensure that the work he had accomplished would continue under the next administration.

77. **Mr. Shank** (Communications Director of the Carbon Neutral Cities Alliance) said that the necessary human agency was in place with regard to the threat of terrorism to urban resilience and sustainability. He hoped that the same level would be in place for climate-related threats in the future. The international community must mobilize around those other pervasive threats.

The meeting rose at 12.55 p.m.